California's Flood Future

Recommendations for Managing the State's Flood Risk

Presentation to
California Water Plan Plenary
September 5, 2012

FloodSAFE CALIFORNIA DEPARTMENT OF WATER RESOURCES

PUBLIC SAFETY ENVIRONMENTAL STEWARDSHIP ECONOMIC STABILITY

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Report Purpose

- Promote understanding of flood problem statewide
- Make recommendations for managing flood risk
- Guide decisions about:
  - Policies
  - Financial investments

California's Flood Future Report

- Unprecedented effort
  - Statewide coverage
  - Joint collaboration: DWR and USACE
- In consultation with:
  - Over 140 local agencies
  - County Engineers Association of California (CEAC)
  - FEMA

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Problem

California is at risk for catastrophic flooding

- 1 in 5 Californians are exposed to flooding
- Nearly $600B in assets are exposed to flooding
- Major flooding in all counties
- Flood insurance policyholders have tripled since 1982

The impacts of a major flood would be devastating to California and to the nation

- Millions of citizens, homes, businesses can be flooded
- Critical infrastructure could be out of service for long periods of time
- Vital services could become isolated or closed
- Water supplies and water quality can be affected
- Vast areas of agriculture lands can be flooded

California experiences many types of flooding

Tsunami Flooding

Slow Rise Flooding

Engineered Structure Failure Flooding

Flash Flooding

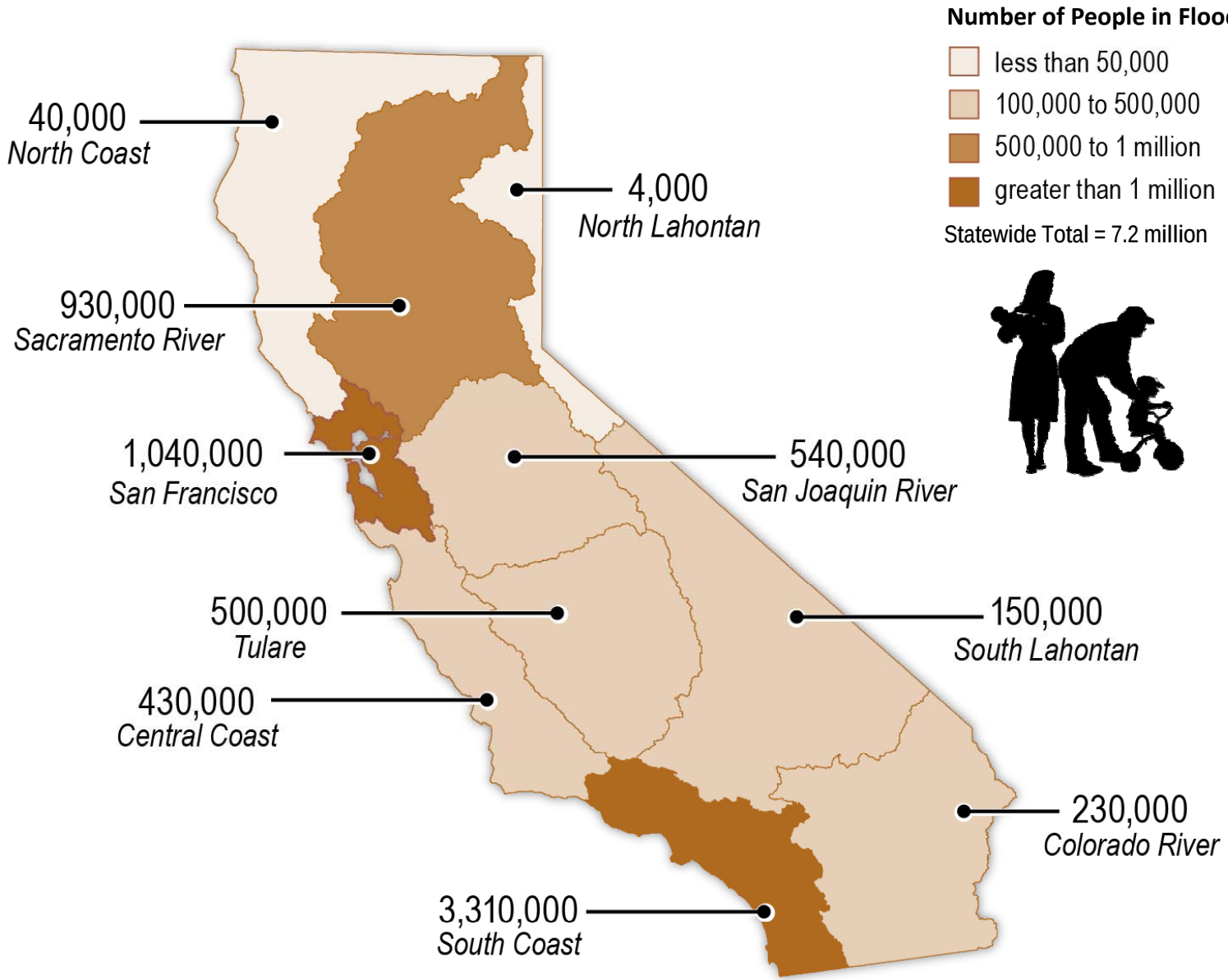
Coastal Flooding

Debris Flow Flooding

Alluvial Fan Flooding

Stormwater Flooding

7.2 million Californians live in floodplains



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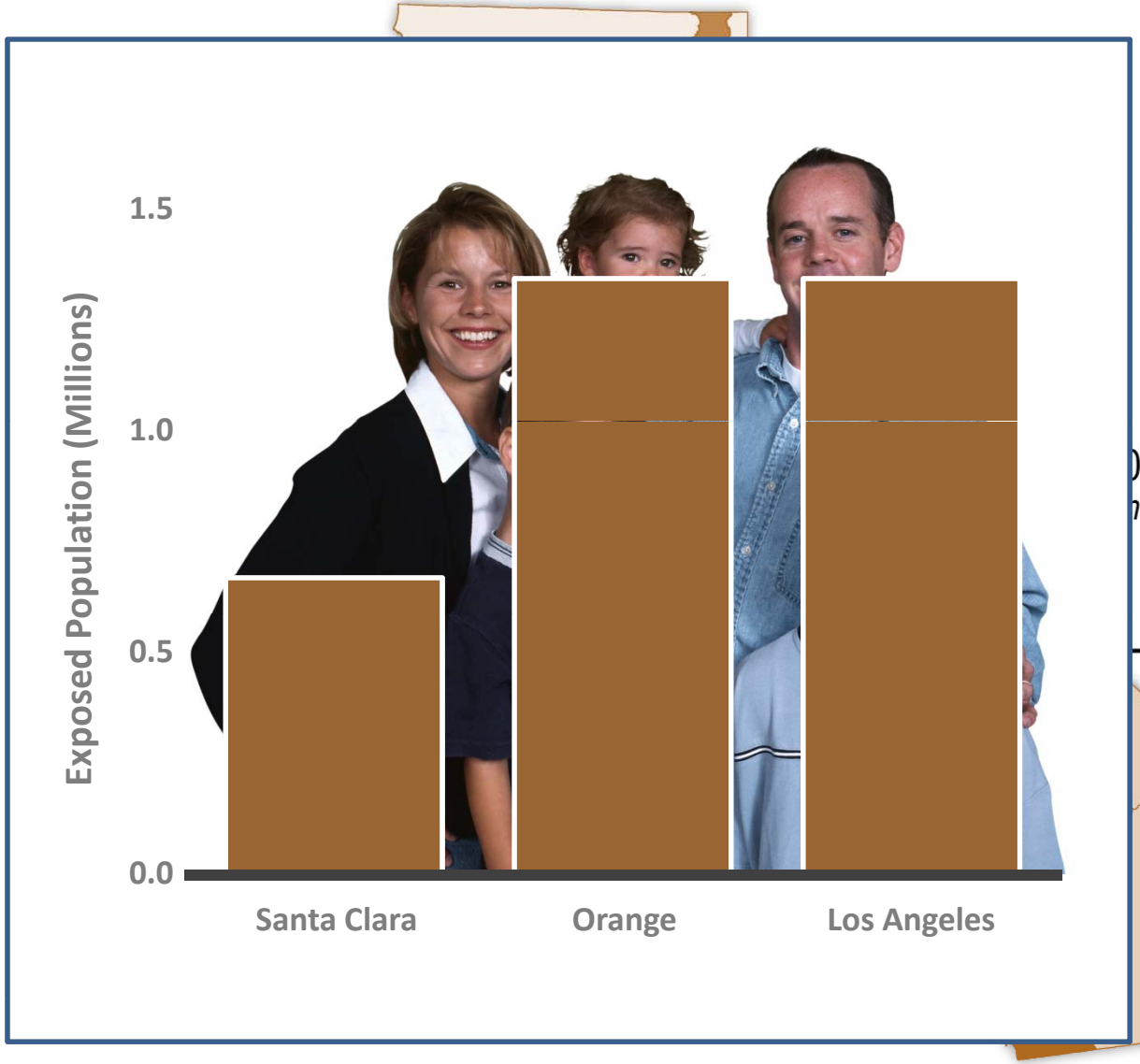
7.2 million Californians live in floodplains



Number of People in Floodplain

- less than 50,000
- 100,000 to 500,000
- 500,000 to 1 million
- greater than 1 million

Statewide Total = 7.2 million

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n River

150,000
South Lahontan

230,000
Colorado River

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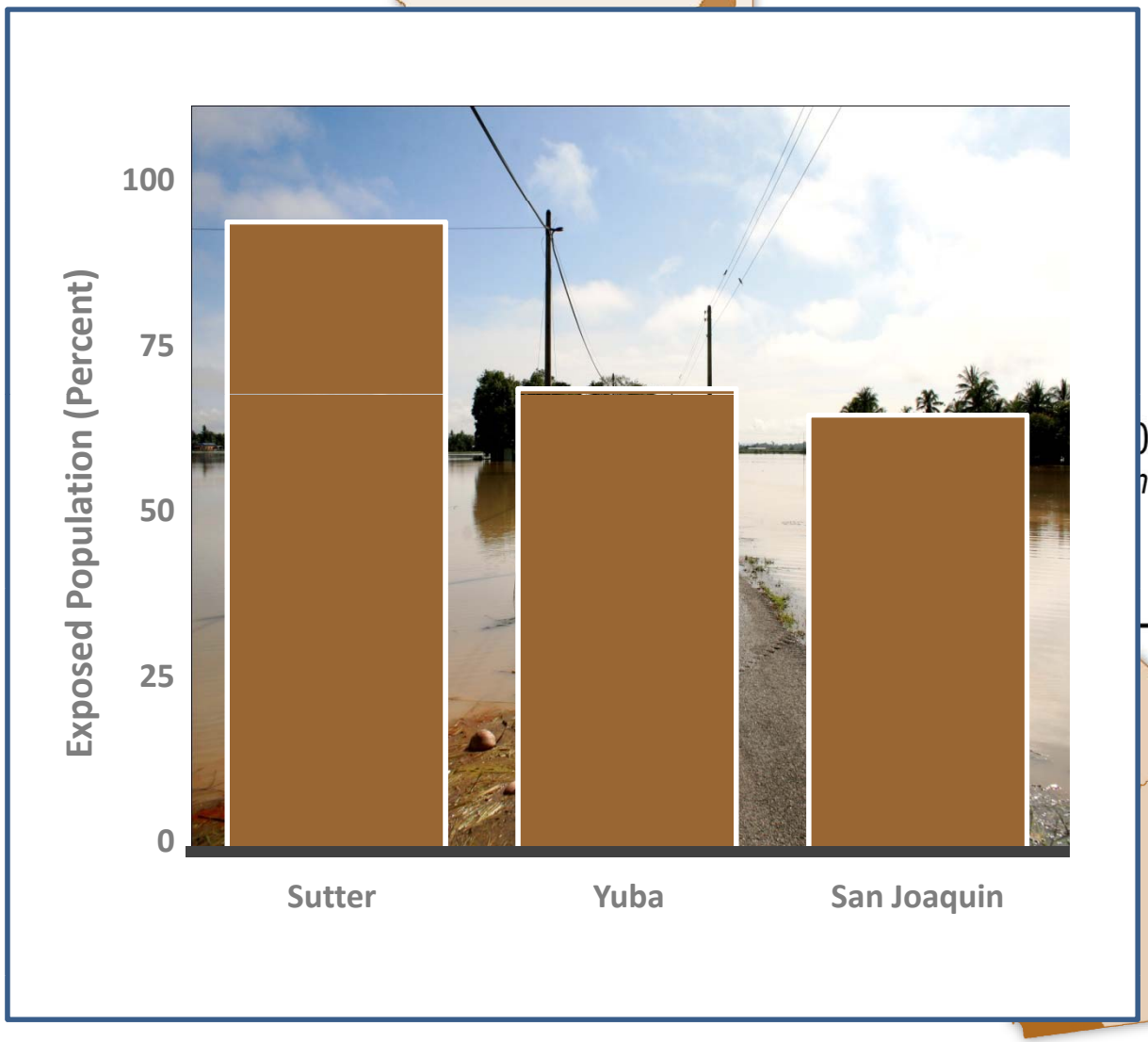

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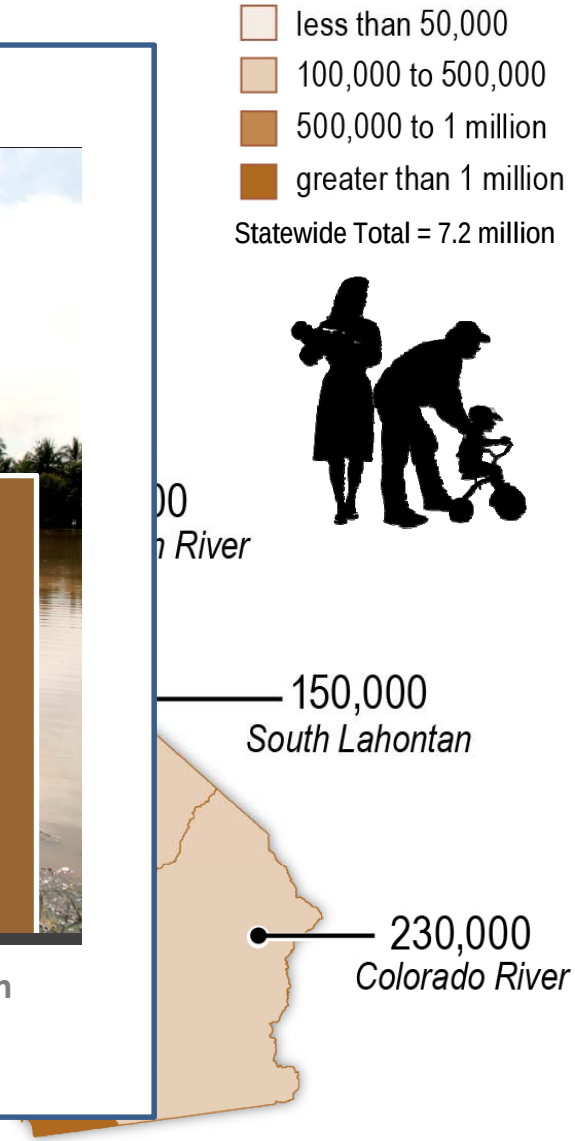

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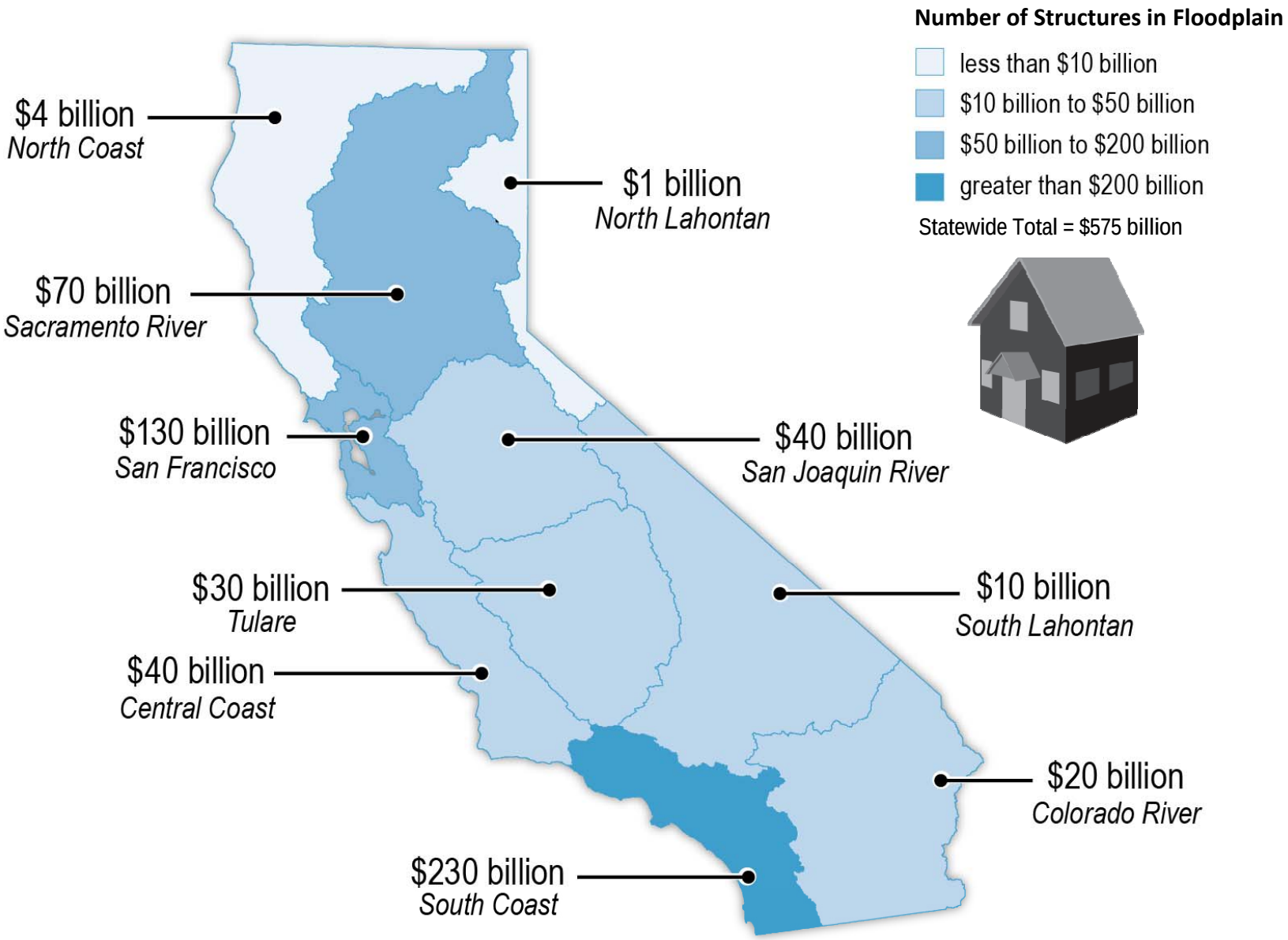
$575 billion in structures are at risk



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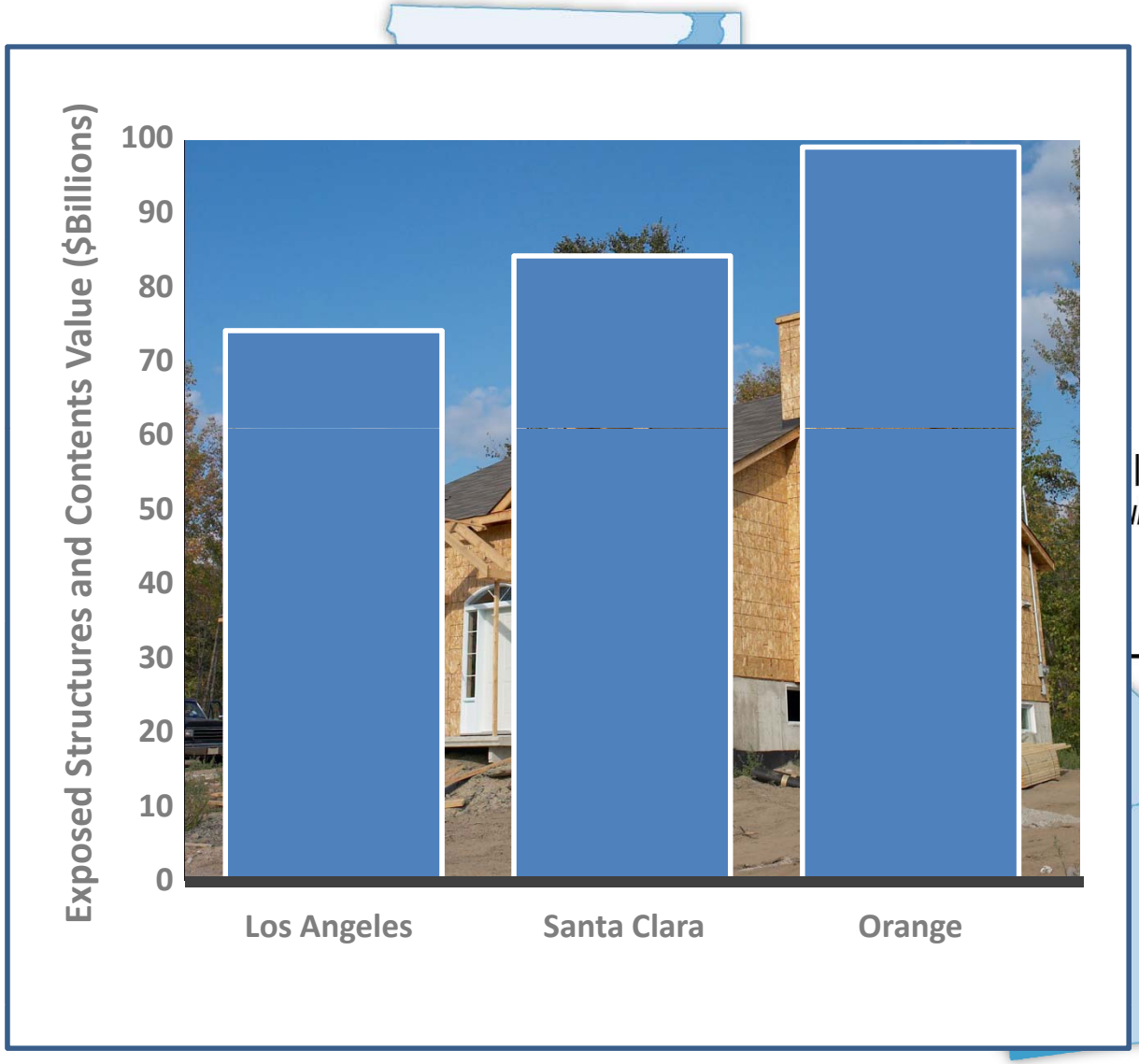

Number of Structures in Floodplain

- less than $10 billion
- $10 billion to $50 billion
- $50 billion to $200 billion
- greater than $200 billion

Statewide Total = $575 billion

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in River

$10 billion
South Lahontan

$20 billion
Colorado River

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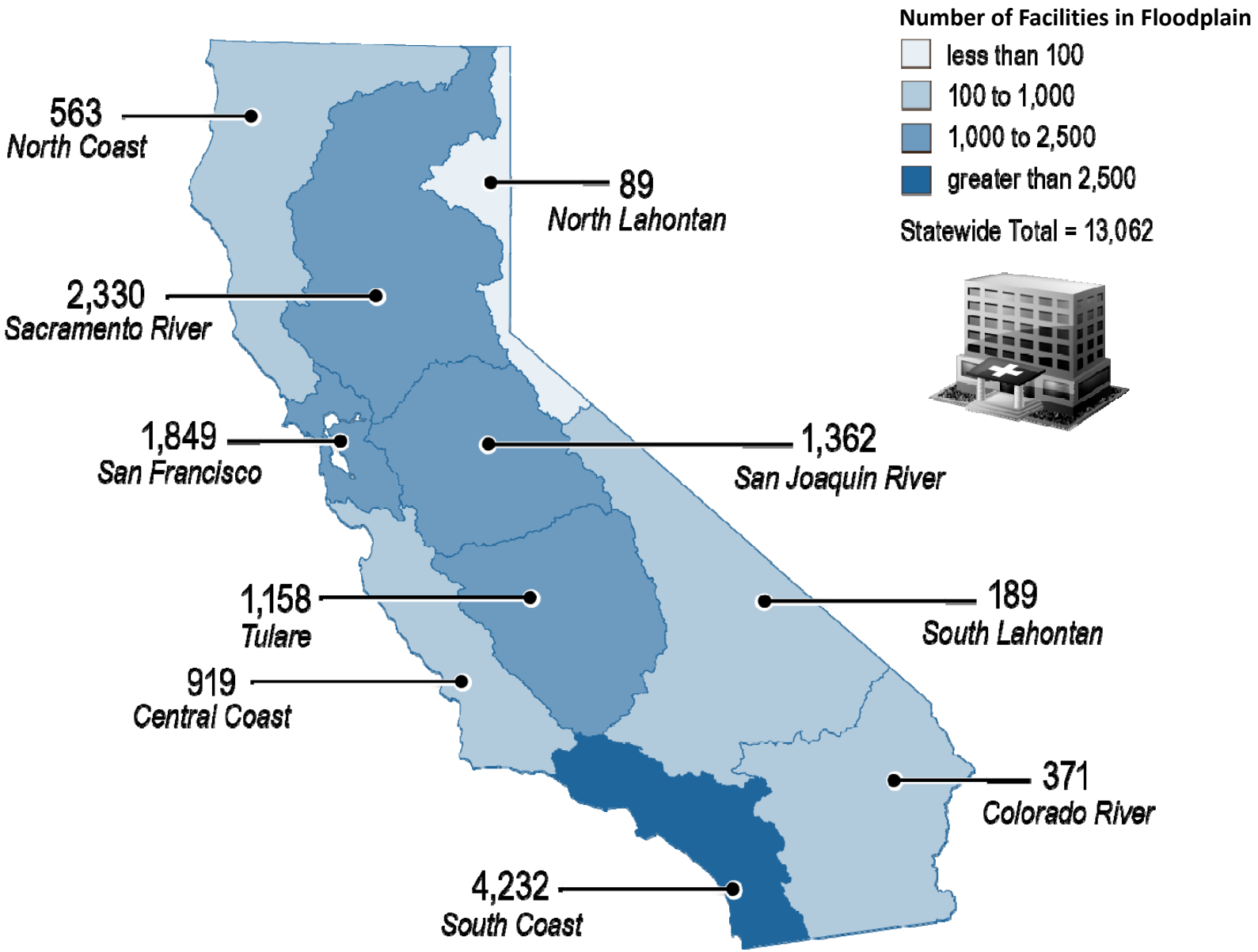
Thousands of critical facilities are in floodplains



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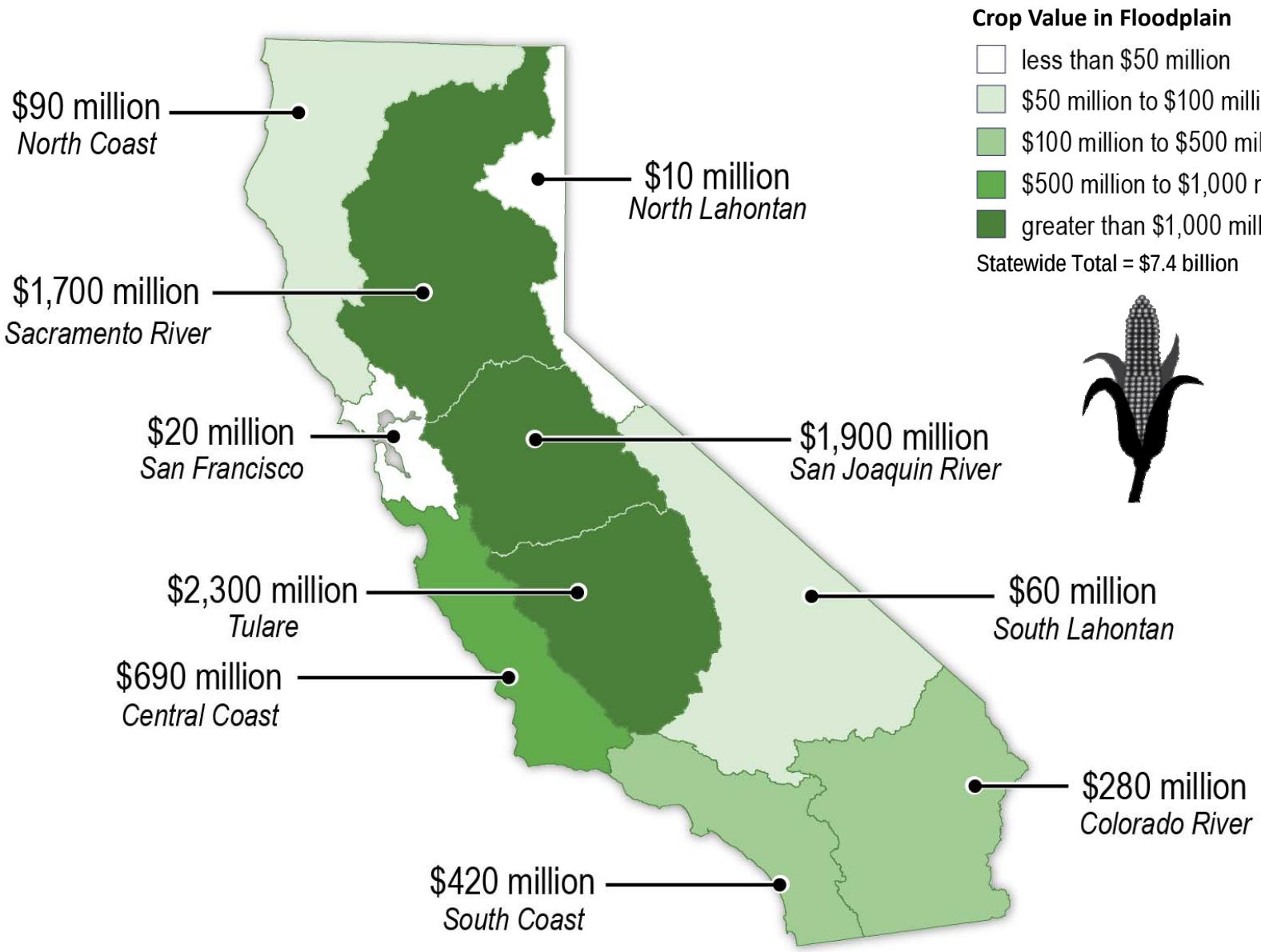
California's agricultural economy is at risk



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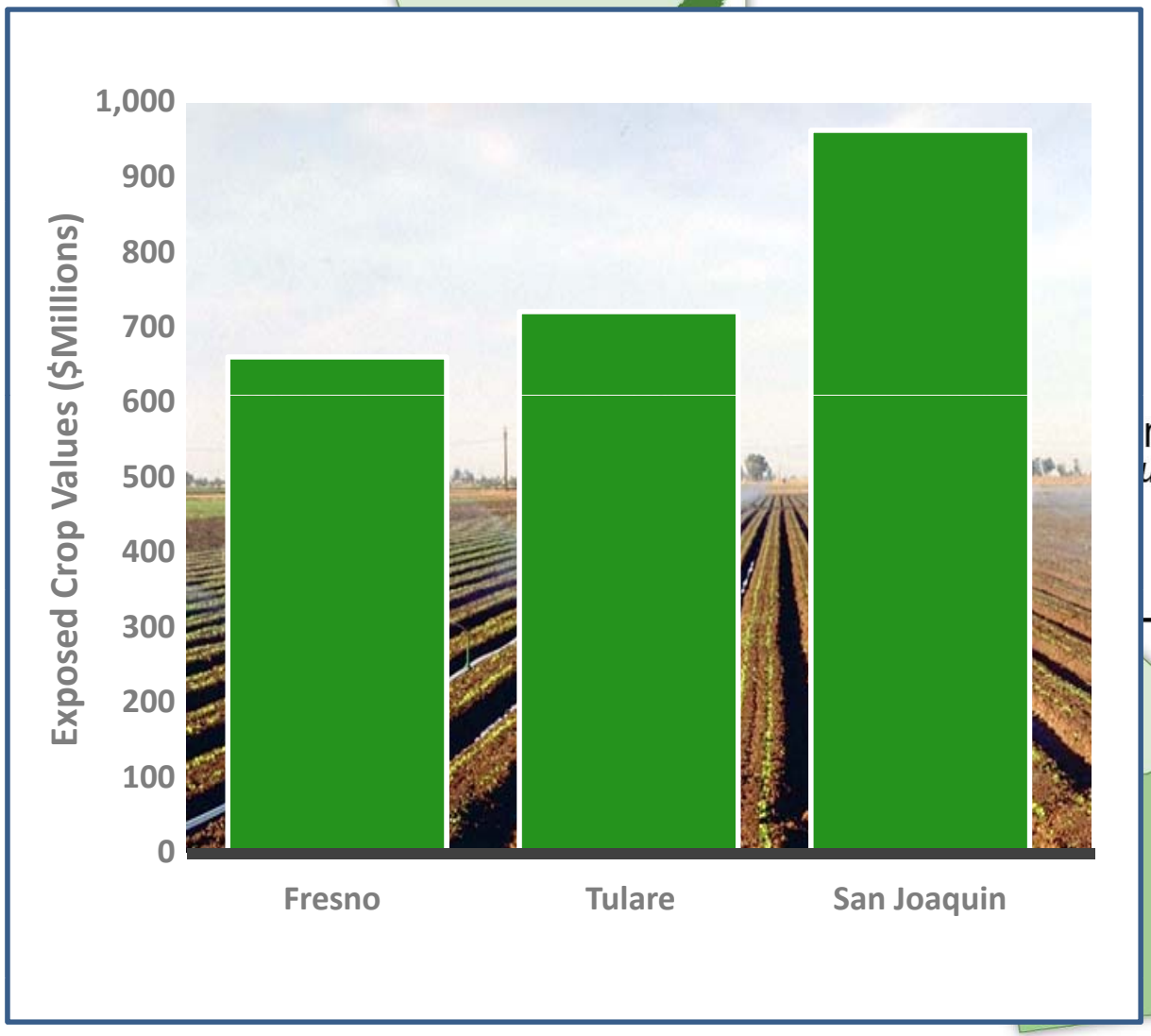

Crop Value in Floodplain

- less than $50 million
- $50 million to $100 million
- $100 million to $500 million
- $500 million to $1,000 million
- greater than $1,000 million

Statewide Total = $7.4 billion

million
uin River

$60 million
South Lahontan

$280 million
Colorado River

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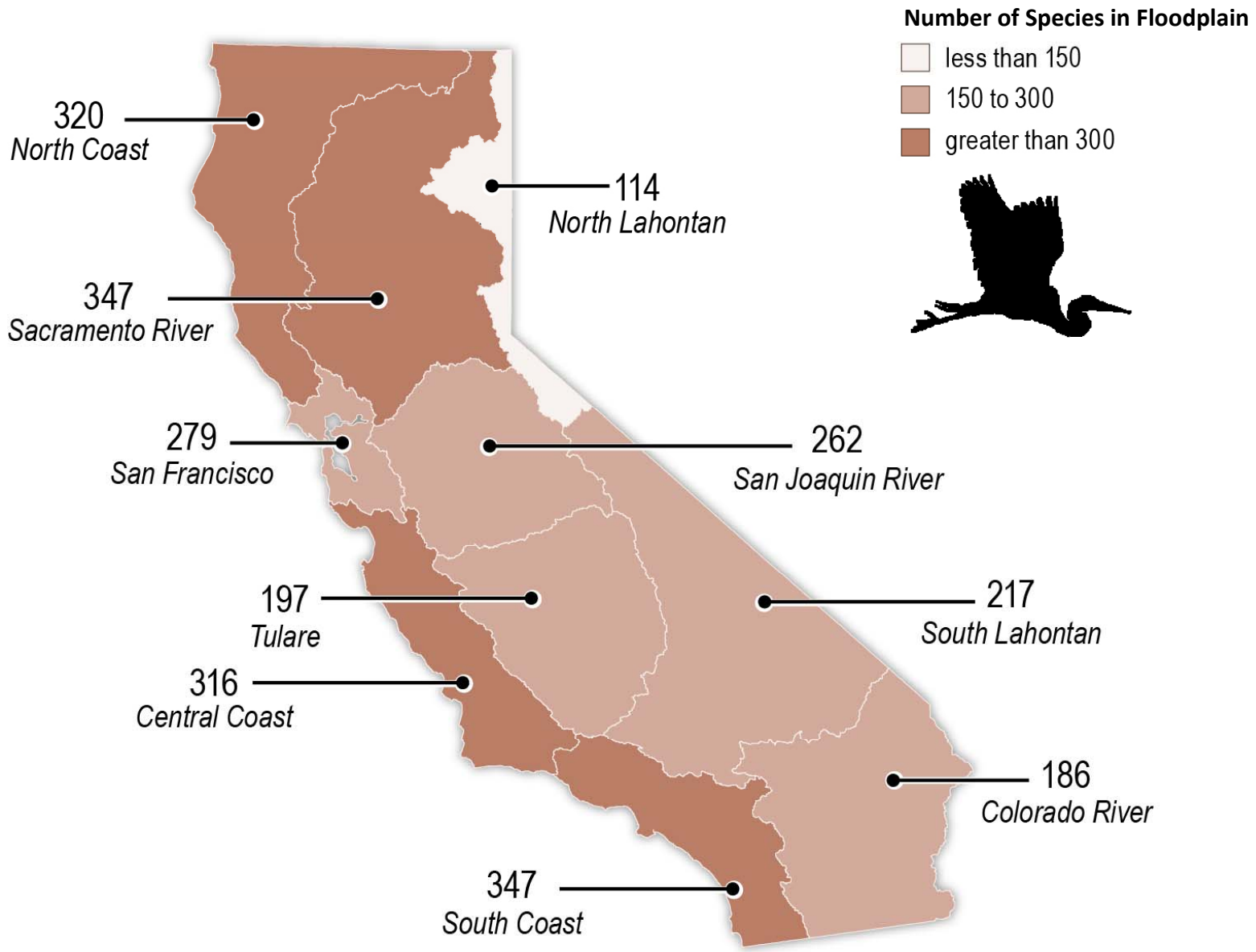
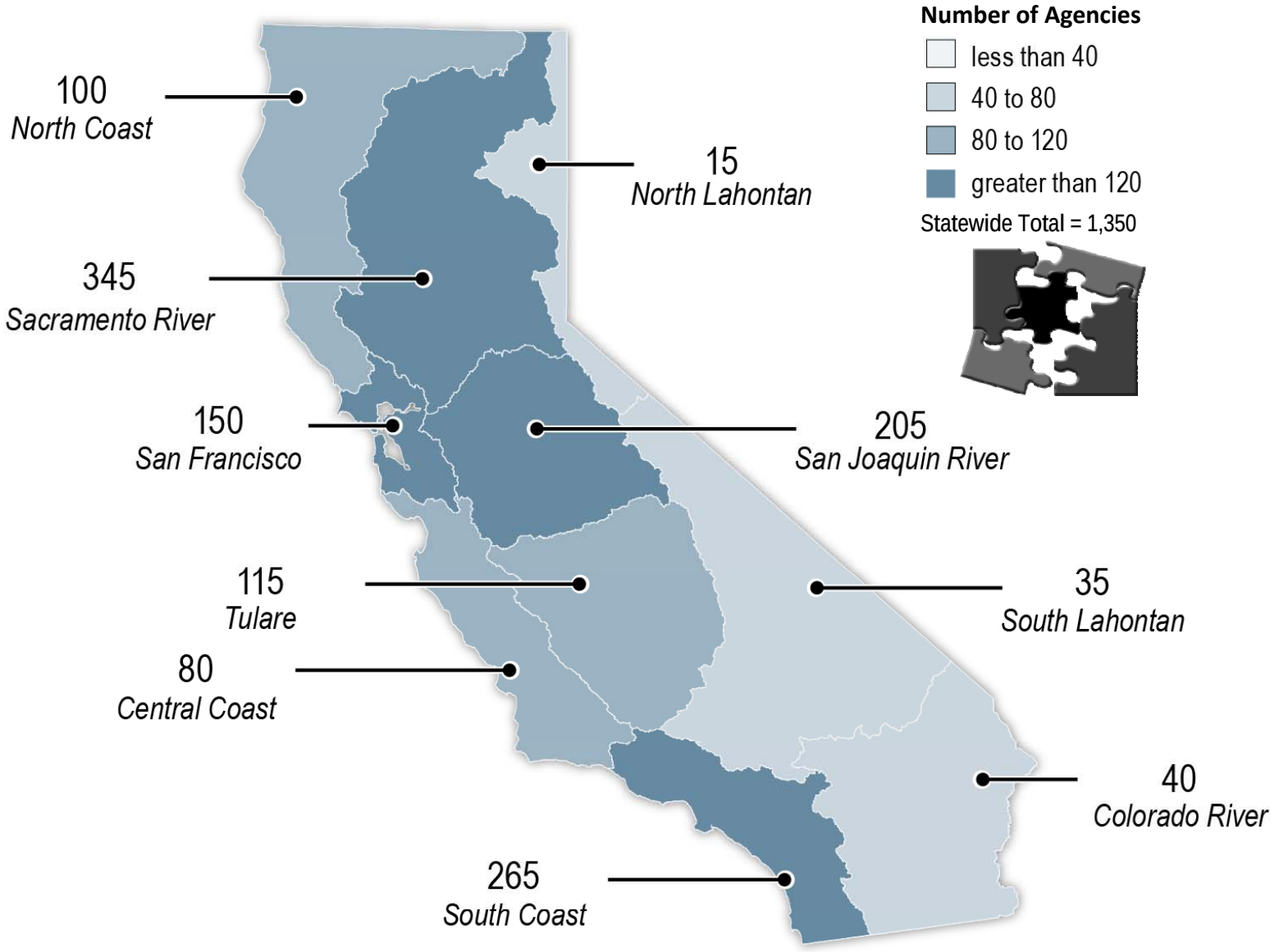
Sensitive species live in floodplains

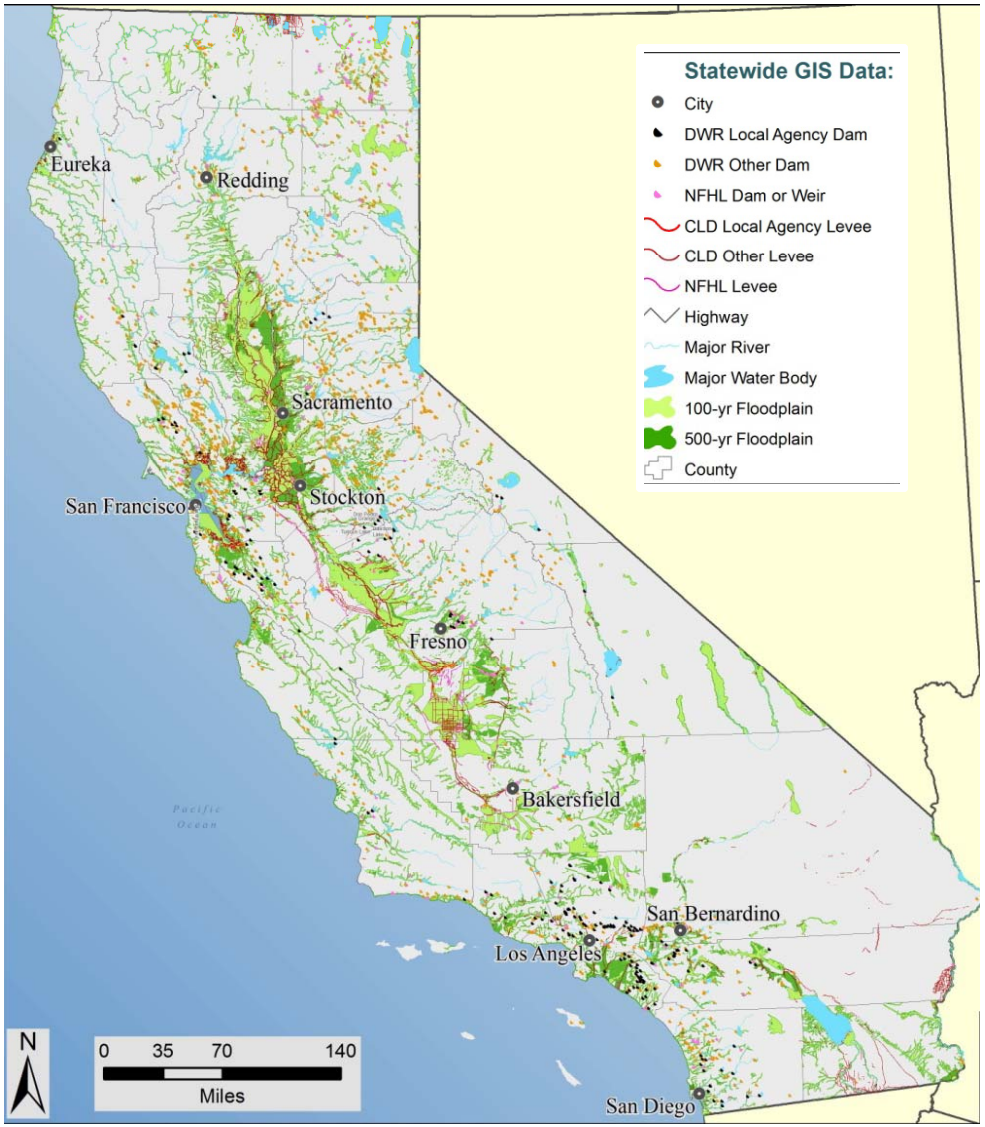


Flood management authority is complex and fragmented



Complex array of existing infrastructure

- More than 11,000 miles of levees
- More than 1,700 dams
- More than 600 debris basins
- 36 major reservoirs
- Other facilities



Flood infrastructure does not meet current and future needs

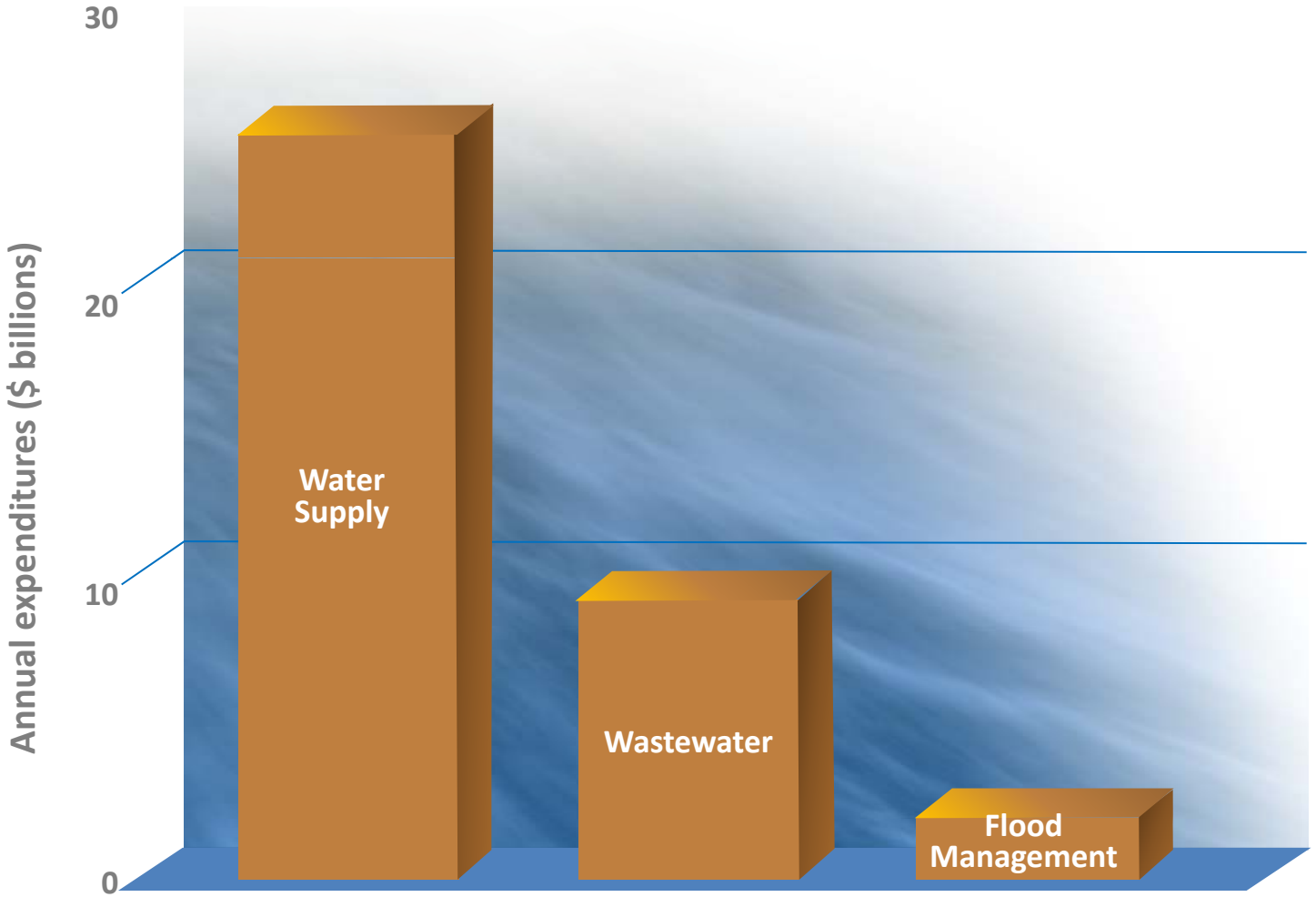
More than 900 projects identified statewide

- 20% do not have cost estimates
- $30 to $50 billion improvements and projects
- Will not provide a 100-year level of protection statewide

Flood funding is limited and unreliable

- Inconsistent and insufficient funding
- Declining local resources
- Reduced Federal cost shares
- Challenging revenue structure
- Cost of flood management misunderstood by public and policy makers

California's flood management expenditures are significantly lower than expenditures for water supply and wastewater treatment



SOURCE: Water and the California Economy – Technical Appendix PPIC, 2012

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Solution

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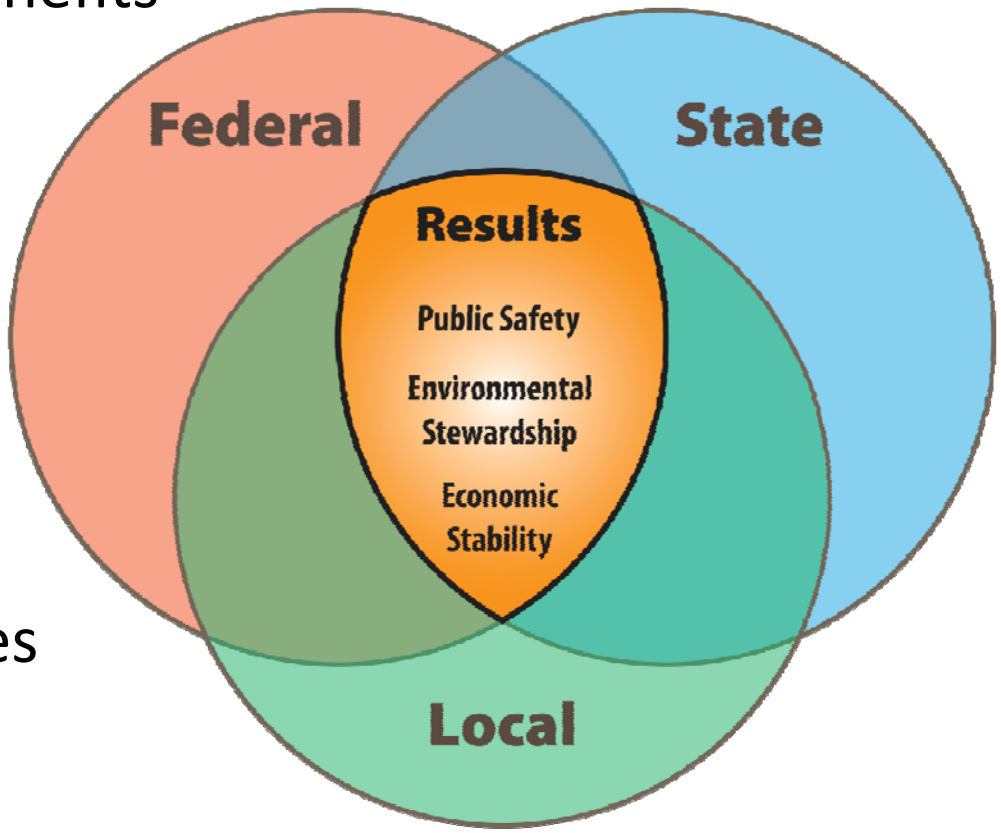
What is IWM?

IWM is a strategic approach that combines specific flood management, water supply, and ecosystem actions to deliver multiple benefits

Flood Management using an Integrated Water Management approach

- High value, multiple benefits
- Large range of solutions
- Collaboration and cooperation
- Regional and systemwide approach
- Array of funding sources



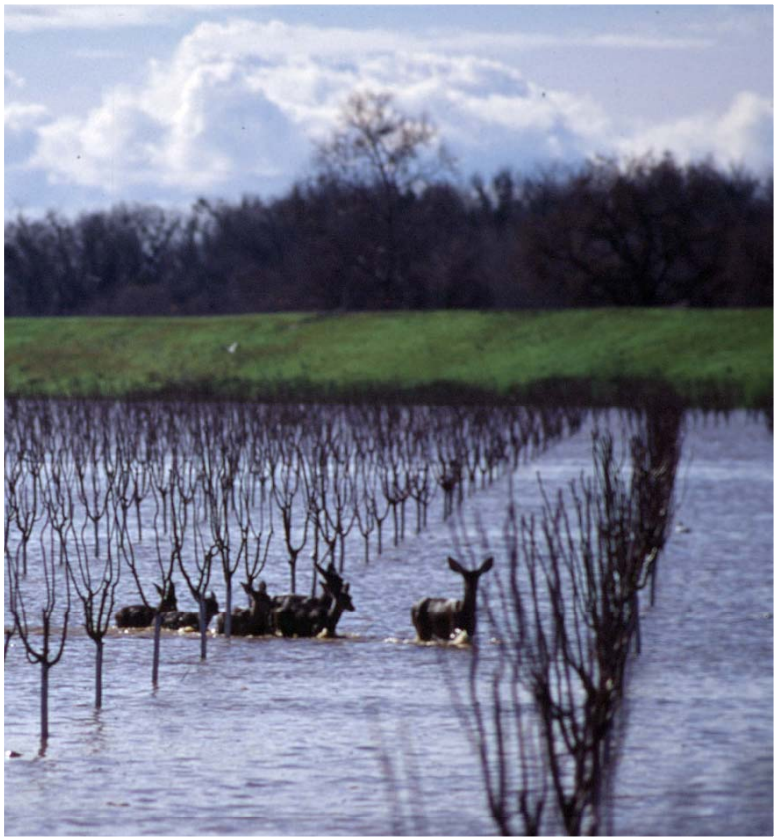
Recommendations for managing California's flood risk

Tools	Plans	Actions	Results
1) Risk Assessments	4) Land Use Planning	6) Alignment	• IWM Benefits
2) Flood Risk Awareness	5) Regional, Systemwide, and Statewide Planning	*-Governance*	*- Public Safety*
3) Flood Readiness		*- Policies*	*- Environmental Stewardship*
		7) Funding	*- Economic Stability*
		- Investment Priorities	
		- Sufficient and Stable Funding	

1 Conduct regional flood risk assessments to understand statewide flood risk

TOOLS

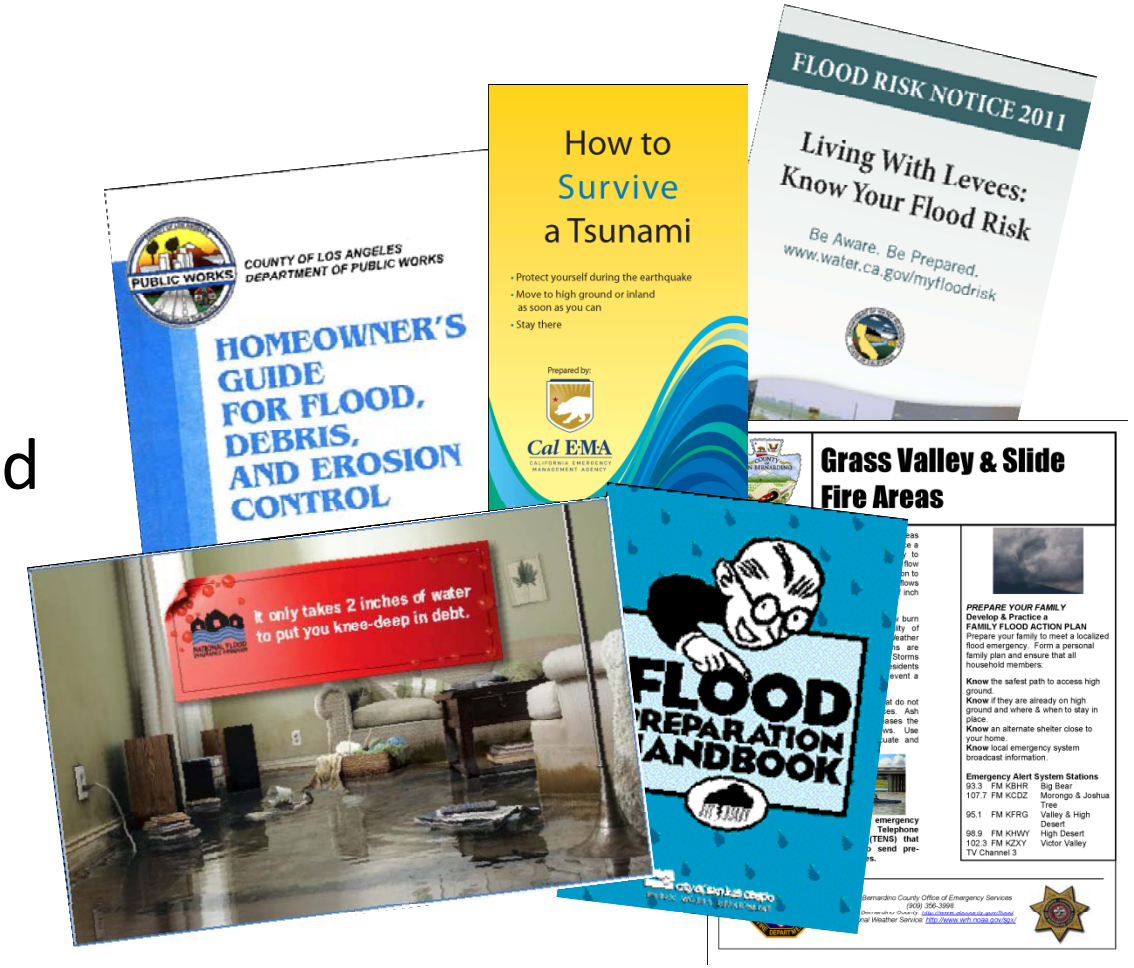
- Identify methods for and conduct regional flood risk
- Set regional flood risk reduction goals
- Identify opportunities to maintain natural systems
- Assess climate change and sea level rise impacts



2 Increase public and policymaker awareness about flood risks to facilitate informed decisions

TOOLS

- Develop consistent messaging
- Provide outreach materials
- Catalog (online) flood risk information
- Share research data and other flood information



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3 Increase support for flood emergency preparedness, response, and recovery programs to reduce flood impacts

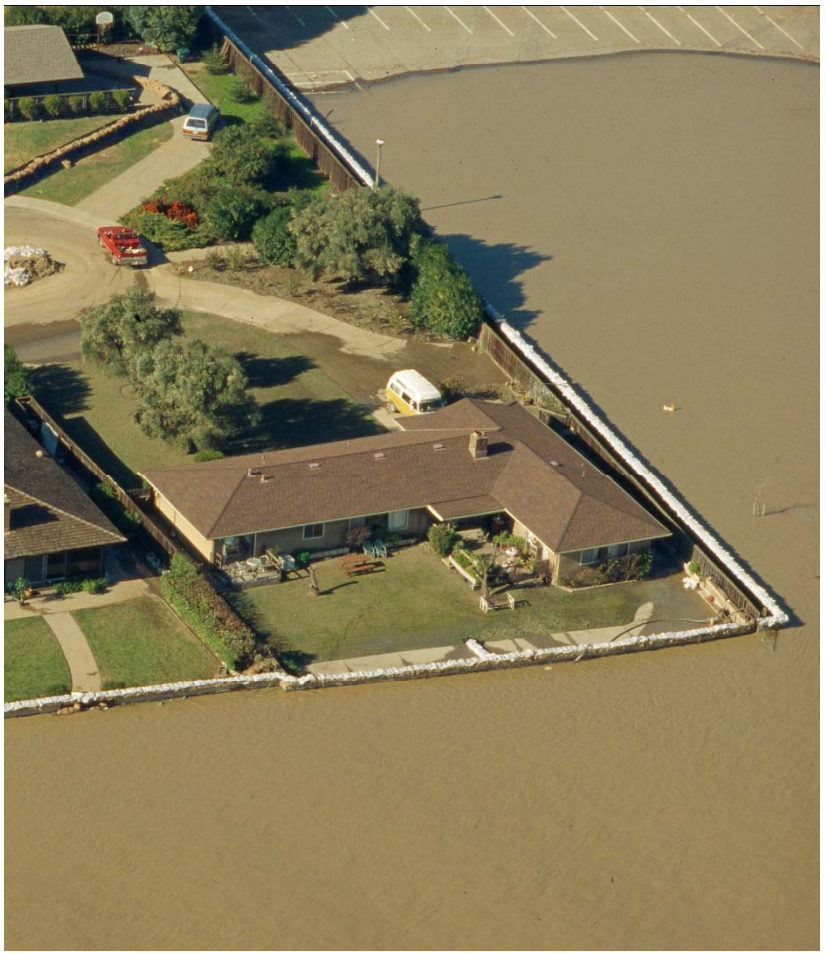
TOOLS

- Provide increased funding for flood readiness
- Develop or improve Flood Emergency Management Plans
- Conduct regular flood emergency exercises
- Identify data/forecasting needs

4 Encourage land-use planning practices that reduce the consequences of flooding

PLANS

- Develop planning principles for development in floodplains
- Facilitate coordination between all types of planners and emergency response managers
- Link funding to best management practices



5 Conduct flood management from regional, systemwide, and statewide perspectives to provide multiple benefits

PLANS

- Identify regional flood planning areas
- Prioritize flood management projects
- State and Federal Process improvements
- Regional water and flood management coordination
- Link funding to an IWM approach

6 Increase collaboration among public agencies to improve flood management planning, policies, and investments

ACTIONS

- Address permitting, planning, and implementation through regional working groups
- Provide funding, grant, and in-kind credit programs
- Develop methodology to prioritize flood management investments

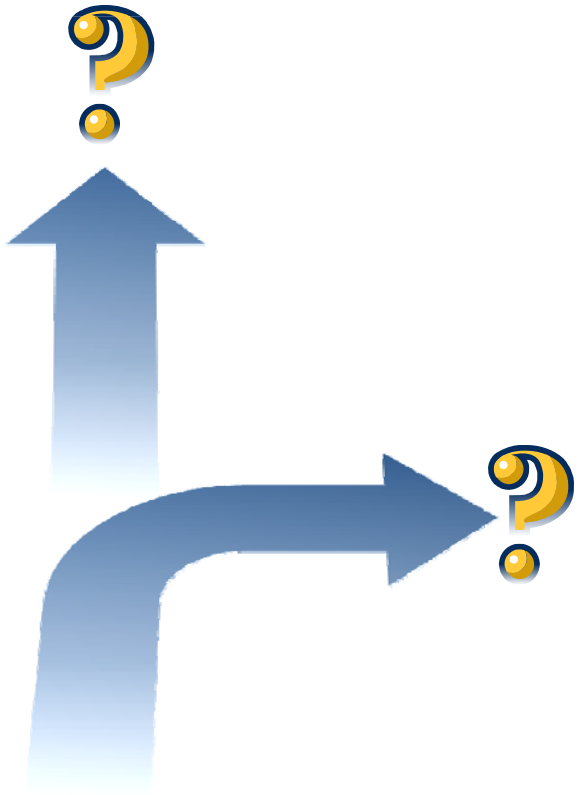
7 Establish sufficient and stable funding mechanisms to reduce flood risk

ACTIONS

- Assess potential funding sources and propose new options
- Facilitate access to funding sources
- Increase funding for priority flood management projects

California's Path Forward

- Flood management is at a crossroads: status quo or progress
- DWR and USACE are committed to using an IWM approach
- Short-term **and** long-term solutions are necessary



Short-Term Actions

Path Forward

- Improved land use planning that limits development in floodplains
- Improved State and Federal agency permitting and planning processes
- Use funding to support IWM approach
- Stakeholder outreach about risk and consequences of flooding

Long-term Solutions

Path Forward

- Sufficient and stable funding must be developed for public safety
- Agency alignment at all levels is needed to deliver projects using an IWM approach

We Must Take Action Now

California's future depends on:

- Agencies at all levels working together
- Implementing policies and projects using an IWM approach
- Stakeholder and policymaker awareness of the cost and consequences of flooding
- Establishing investment priorities and sufficient and stable funding

Implementing an IWM approach will result in improved public safety, environmental stewardship, and economic stability.

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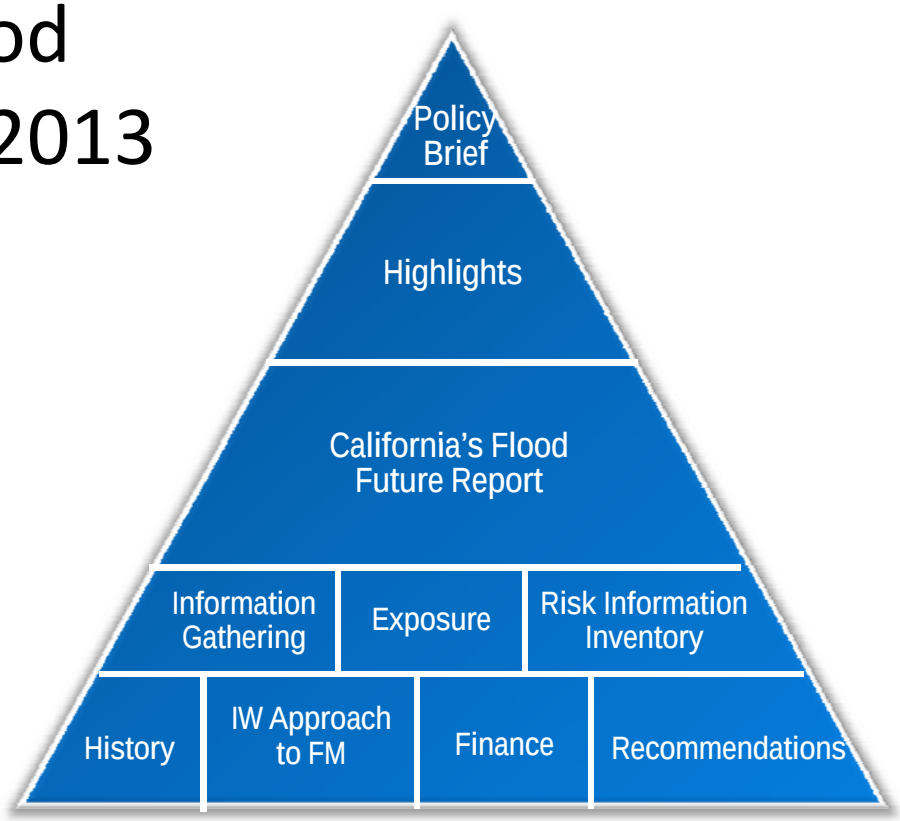
Schedule

- TMs and California's Flood Future Highlights: Early 2013
- California's Flood Future Report: Spring 2013



For more information:

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http://www.water/ca/gov/SFMP

Questions?